Jacob Englert M.S.

Grace Crum Rollins Room 351
Department of Biostatistics & Bioinformatics
Emory University
jacobenglert@outlook.com
https://jacobenglert.rbind.io

Education

Emory University ***2020 – Present***
Ph.D. in Biostatistics
Dissertation: Bayesian Machine Learning Approaches for Environmental Exposure Research
Anticipated Graduation: 05/2025

Emory University ***2020 – 2023***
M.S. in Biostatistics
GPA: 3.91 / 4.00

Northern Kentucky University ***2015 – 2019***
B.S. in Mathematics and Statistics
GPA: 4.00 / 4.00, *Summa Cum Laude*

Research Experience

Emory University Atlanta, GA

Ph.D. Candidate (Dissertation) *Aug 2022 – Present*
Title: Bayesian Machine Learning Approaches for Environmental Exposure Research
Advisor: Dr. Howard Chang
Description: Extends the Bayesian additive regression trees (BART) framework to popular environmental study designs. Current applications include estimation of heterogeneous heatwave effects in the Alzheimer's population and flexible modeling of the exposure risk surface for respiratory outcomes.
Methods: BART, reversible jump Markov chain Monte Carlo (MCMC), conditional logistic regression, negative binomial regression, conditional autoregressive models

Research Assistant *Dec 2021 – Present*
Title: Sharing Patients' Illness Representations to Increase Trust (SPIRIT)
Advisors: Dr. Amita Manatunga and Dr. Mi-Kyung Song
Description: Analyzed data from a multi-site cluster randomized trial to assess the efficacy of an intervention to improve decision making confidence, post-bereavement outcomes, and treatment intensity for patients with end-stage renal disease and their surrogates.
Methods: Generalized linear mixed models, generalized estimating equations

Research Assistant *May 2021 – Dec 2021*
Advisor: Dr. Lance Waller
Description: Investigated the ability of sequentially layered spatial smoothing and spatial cluster detection techniques to identify hot spots for opioid overdoses in Georgia.
Methods: Inverse-distance smoothing, Besag-York-Mollié model, integrated nested Laplace approximation (INLA); clustering tests of Turnbull, Besag & Newell, and Kulldorff

Northern Kentucky University Highland Heights, KY

Undergraduate Research Assistant *Jan 2018 – May 2019*
Advisor: Dr. Andrew Long
Description: Collaborated with Togolese meteorologists to estimate long-term trends and seasonality in temperature time series data measured across 10 Togolese cities.
Methods: Singular spectrum analysis, linear mixed models

Undergraduate Research Assistant *Jan 2017 – May 2017*
Advisors: Dr. Dhanuja Kasturiratna, Dr. Lisa Holden, and Dr. Stuart Goldstein
Description: Collaborated with Cincinnati Children's Hospital to develop a model to predict the development of chronic kidney disease in children with acute kidney injury.
Methods: Logistic regression

Professional Experience

Medpace — Cincinnati, OH
Biostatistics Intern → Data Analyst — *Jan 2018 – Jul 2020*

- Designed interactive Spotfire dashboards used to monitor patient safety and compliance
- Conducted power simulations in R to study impacts of over-stratification in clinical trial designs
- Developed program templates for generating static and animated SAS graphics
- Programmed tables and figures to summarize safety and efficacy endpoints

Burkardt Consulting Center — Highland Heights, KY
Statistical Consultant — *Aug 2018 – May 2019*

- Advised academic and industrial clients on the formulation of research hypotheses, data collection, and statistical methodology

Federal Bureau of Investigation — Cincinnati, OH
Intern — *Jun 2017 – Dec 2017*

- Assisted cybercrimes squad with investigations by identifying statistical anomalies in case data

Publications

1. M.-K. Song, A. Manatunga, L. Plantinga, *et al.*, "Effectiveness of an Advance Care Planning Intervention in Adults Receiving Dialysis and Their Families: A Cluster Randomized Clinical Trial," en, *JAMA Network Open*, vol. 7, no. 1, e2351511, Jan. 2024.

Submitted Manuscripts

1. J. Englert, S. Ebelt, and H. Chang, *Bayesian semiparametric estimation of heterogeneous effects in matched case-control studies with an application to alzheimer's disease and heat*, 2023. arXiv: 2311.12016 [stat.ME].

Invited Presentations

Estimating Heterogeneous Heatwave Effects among People with Alzheimer's Disease using BART — *Oct 2023*
ENVISION Research Group
Atlanta, GA

Contributed Talks & Posters

The Effectiveness of SPIRIT in Preparing Patients on Dialysis and Their Surrogates for End-of-Life Decision Making: A Pragmatic Trial — *Nov 2022*
Kidney Week | American Society of Nephrology
Orlando, FL

Mapping the Opioid Epidemic in the Midwestern United States — *Mar 2019*
KYMAA Annual Meeting
Danville, KY

Climate Change in Togo, West Africa: 3° C Hotter (or so) by the End of the Century — *Mar 2019*
KYMAA Annual Meeting
Danville, KY

Analyzing Outcomes of Non-Deterministic Events in Fluctuating Temporal Data — *Feb 2019*
Posters At-The-Capitol
Frankfurt, KY

Modeling Climate Change in Togo, Africa — *Jan 2019*
Joint Mathematics Meetings
Baltimore, MD

Teaching Experience

Teaching Assistant, Department of Biostatistics and Bioinformatics, Emory University

QTM 100 - Introduction to Statistical Inference — *Spring 2024*

EPI 590R - R Bootcamp for Epidemiology — *Fall 2023*

BIOS 509 - Applied Linear Models — *Spring 2022, Spring 2023*
Guest Lecture: Poisson and Negative Binomial Regression

BIOS 525 - Longitudinal and Multi-Level Data Analysis — *Fall 2022*
Guest Lecture: Bayesian Hierarchical Models

Guest Lecture: Simulation Studies in R

INFO 532 - Advanced Geographical Information Systems *Fall 2021*

INFO 530 - Introduction to Geographical Information Systems *Spring 2021, Fall 2021*

Teaching Assistant, Department of Mathematics and Statistics, Northern Kentucky University

STA 205 - Introduction to Statistical Methods *Spring 2016 – Fall 2018*

Skills

Programming R, SAS, Python, SQL, C++ (Rcpp), Mathematica, LaTeX
Tools Spotfire, Tableau, SPSS, JMP, Minitab, ArcMap, Git, HPC systems, MS Office
Certifications SAS Certified Base Programmer for SAS 9

Awards & Honors

First Year Qualifying Exam Top Performer, Emory University *2021*

Laney Graduate School Fellowship, Emory University *2020*

Outstanding Senior in Statistics, Northern Kentucky University *2019*

Outstanding Senior in Mathematics, Northern Kentucky University *2019*

Honorable Mention, COMAP Mathematical Contest in Modeling *2019*

Outstanding Poster Presentation, Joint Mathematics Meetings *2019*

Honorable Mention, Public Health Data Challenge, American Statistical Association *2018*

International Study Scholarship, Northern Kentucky University *2018*

Outstanding Student Writing Award, Northern Kentucky University *2016*

President's List (x8), Northern Kentucky University *2015 – 2019*

Distinguished Scholarship, Northern Kentucky University *2015*

Service

HERCULES Exposome Research Center, Data Science Fellow *2024*

John O'Bryan Mathematics Competition, Scorekeeper *2017 – 2018*

Student Government Association at Northern Kentucky University, Justice *2016 – 2017*

Membership

American Statistical Association

Eastern North American Region International Biometric Society